

MICHIGAN STATE POLICE  
RETIREMENT SYSTEM

# PENSION PLAN REVIEW

July 19, 2007



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**Acting Director, Bureau of Investments**



- Mission, Goals, Objectives
- MSPRS Membership
- Markets and Economics
- Rates of Return
- Investment Holdings
- Diversification



## *Bureau of Investments*

# *Mission Statement*



*The Bureau of Investments provides quality investment management services, professional expertise, and advice to the State Treasurer as fiduciary of the State of Michigan Retirement Systems and Michigan boards and agencies. The Bureau strives to provide consistent and cost-effective management of funds to achieve competitive investment returns that meet objectives within an acceptable level of risk for the benefit of employees, retirees, and citizens of the State of Michigan.*



## *State of Michigan Retirement Systems*

# *Investment Goals*

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- ***Meet or exceed actuarial assumption over the long term.***
- ***Maintain sufficient liquidity to pay benefits.***
- ***Achieve optimal rate of return possible with prudent levels of risk.***



# *State of Michigan Retirement Systems Investment Objectives*

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- *Diversify assets to preserve capital and avoid large losses.*
- *Perform in the top half of the public plan universe over the long term.*
- *Exceed individual asset class benchmarks over the long term.*
- *Operate in a cost-effective manner relative to peers.*



# Member Information





# Plan Membership

September 30, 2006

MEMBER TYPE	MSPRS
<b>Retirees &amp; Benef. Receiving Benefits</b>	<b>2,711</b>
<b><i>One-Year Change</i></b>	<b><i>-15</i></b>
<b>Current Employees Vested</b>	<b>1,094</b>
<b>Current Employees Non-Vested</b>	<b>584</b>
<b>Active Members Total</b>	<b>1,678</b>
<b><i>One-Year Change</i></b>	<b><i>-30</i></b>
<b>Inactive Employees Entitled To, But Not Yet Receiving Benefits</b>	<b>12</b>
<b>Total MSPRS Members</b>	<b>4,401</b>
<b><i>One-Year Change</i></b>	<b><i>-44</i></b>

Source: Pension Plans Component Unit Financial Reports Fiscal Year Ended September 30, 2006



# Plan Membership Ratio

September 30, 2006

Ratio of Active/Retiree	MSPRS
<b>Year 2006</b>	<b>.62:1</b>
<b>Year 2005</b>	<b>.63:1</b>
<b>Year 2004</b>	<b>.70:1</b>
<b>Year 2003</b>	<b>.72:1</b>
<b>Year 2002</b>	<b>.83:1</b>

Source: Pension Plans Component Unit Financial Reports Fiscal Year Ended September 30, 2006





# Funded Ratio

September 30, 2006

Year	Market Value of Assets*	Actuarial Value of Assets*	Actuarial Accrued Liability*	Funded Ratio Based on Actuarial Value**
<b>2006</b>	<b>\$1,204</b>	<b>\$1,114</b>	<b>\$1,386</b>	<b>80.4%</b>
<b>2005</b>	<b>\$1,120</b>	<b>\$1,090</b>	<b>\$1,300</b>	<b>83.8%</b>
<b>2004</b>	<b>\$1,043</b>	<b>\$1,118</b>	<b>\$1,256</b>	<b>89.0%</b>
<b>2003</b>	<b>\$ 977</b>	<b>\$1,139</b>	<b>\$1,186</b>	<b>96.0%</b>
<b>2002</b>	<b>\$ 888</b>	<b>\$1,141</b>	<b>\$1,136</b>	<b>100.4%</b>
<b>1980</b>	<b>\$ 101</b>	<b>\$ 101</b>	<b>\$ 173</b>	<b>58.4%</b>

\*( \$ in Millions)

\*\*Funded Ratio Based on Actuarial Value of Assets Reflecting Five-Year Smoothing.

Source: Pension Plans Component Unit Financial Reports and Actuarial Valuations



# Markets and Economics





# Stock Market Environment

Market	2006 Price Change	12/31/06
<b>DJIA</b>	<b>+16.3%</b>	<b>12,463</b>
<b>S&amp;P 500</b>	<b>+13.6%</b>	<b>1,418</b>
<b>NASDAQ</b>	<b>+9.5%</b>	<b>2,415</b>
<b>BMI-EPAC (Local)</b>	<b>+13.6%</b>	<b>250.8</b>
<b>BMI-EPAC (USD)</b>	<b>+23.2%</b>	<b>292.5</b>



# First Quarter Stock Market Update

Market	1 <sup>st</sup> Qtr. 07	
	Price Change	3/31/07
<b>DJIA</b>	<b>-0.87%</b>	<b>12,354</b>
<b>S&amp;P 500</b>	<b>+0.18%</b>	<b>1,421</b>
<b>NASDAQ</b>	<b>+0.26%</b>	<b>2,422</b>
<b>BMI-EPAC (Local)</b>	<b>+3.17%</b>	<b>258.8</b>
<b>BMI-EPAC (USD)</b>	<b>+3.86%</b>	<b>303.8</b>



# Bond Market Environment

Market	2006 Yield Change	4/30/07
<b>30-Year Treasury</b>	<b>+27 bp</b>	<b>4.81%</b>
<b>10-Year Treasury</b>	<b>+31 bp</b>	<b>4.62%</b>
<b>5-Year Treasury</b>	<b>+34 bp</b>	<b>4.51%</b>
<b>2-Year Treasury</b>	<b>+41 bp</b>	<b>4.58%</b>
<b>13-Week T. Bill</b>	<b>+106 bp</b>	<b>4.88%</b>
<b>Fed Funds</b>	<b>+100 bp</b>	<b>5.25%</b>



# First Quarter Bond Market Update

Market	1 <sup>st</sup> Qtr. 07	
	Yield Change	3/31/07
<b>30-Year Treasury</b>	<b>+3 bp</b>	<b>4.84%</b>
<b>10-Year Treasury</b>	<b>-6 bp</b>	<b>4.64%</b>
<b>5-Year Treasury</b>	<b>-16 bp</b>	<b>4.53%</b>
<b>2-Year Treasury</b>	<b>-24 bp</b>	<b>4.57%</b>
<b>13-Week T. Bill</b>	<b>-2 bp</b>	<b>5.03%</b>
<b>Fed Funds</b>	<b>0 bp</b>	<b>5.25%</b>

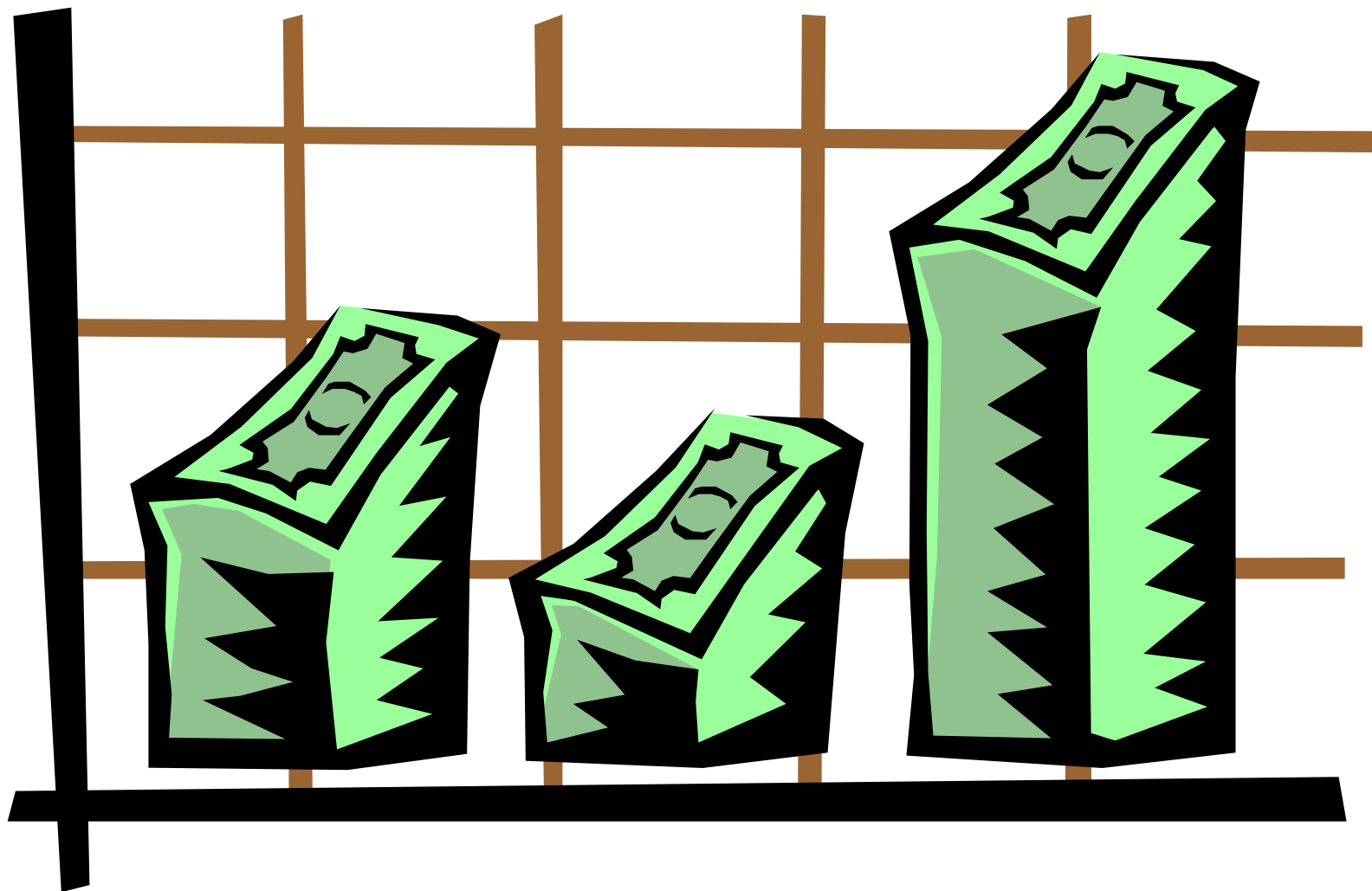


# Economic Environment

- **Real GDP averaged 3.4 percent in 2006. Slower start for 2007.**
- **Inflation (CPI) of 3.2 percent.**
- **Employment grew – unemployment low.**
- **Corporate earnings & balance sheets remained strong.**
- **Federal Reserve on hold.**
- **Significant merger & acquisition activity.**
- **\$60 per barrel oil.**
- **Deflating housing market.**



# Return On Investments







# Time-Weighted Rates of Return

Asset Class w/Benchmark	FY06		CY06	
	Rate	Rank	Rate	Rank
Total Plan	12.9%	6	15.1%	25
<b>Median*</b>	<b>10.5%</b>		<b>14.3%</b>	
Domestic Equities	10.8%		15.2%	
<b>S&amp;P 1500 Index</b>	<b>10.3%</b>		<b>15.3%</b>	
International Equities	18.0%		21.0%	
<b>S&amp;P/CitiGroup BMI-EPAC**</b>	<b>18.5%</b>		<b>21.0%</b>	
Private Equity	26.3%		22.3%	
<b>S&amp;P 500 + 300 b.p.</b>	<b>13.9%</b>		<b>18.9%</b>	

\*State Street Universe of Public Funds > \$1 Billion

\*\*(1/2 USD & 1/2 LC)

Source: State Street Analytics



# Time-Weighted Rates of Return

Asset Class w/Benchmark	FY06		CY06	
	Rate	Rank	Rate	Rank
Real Estate	18.9%		18.3%	
<b>NCREIF (NPI minus 75 b.p.)</b>	<b>16.3%</b>		<b>15.3%</b>	
Bonds	4.0%		4.7%	
<b>Lehman Gov't/Credit</b>	<b>3.3%</b>		<b>3.8%</b>	
Cash Equivalents	4.7%		5.0%	
<b>30 Day T-Bill</b>	<b>4.4%</b>		<b>4.8%</b>	

**Fiscal Year – 10-Year Annualized Return**

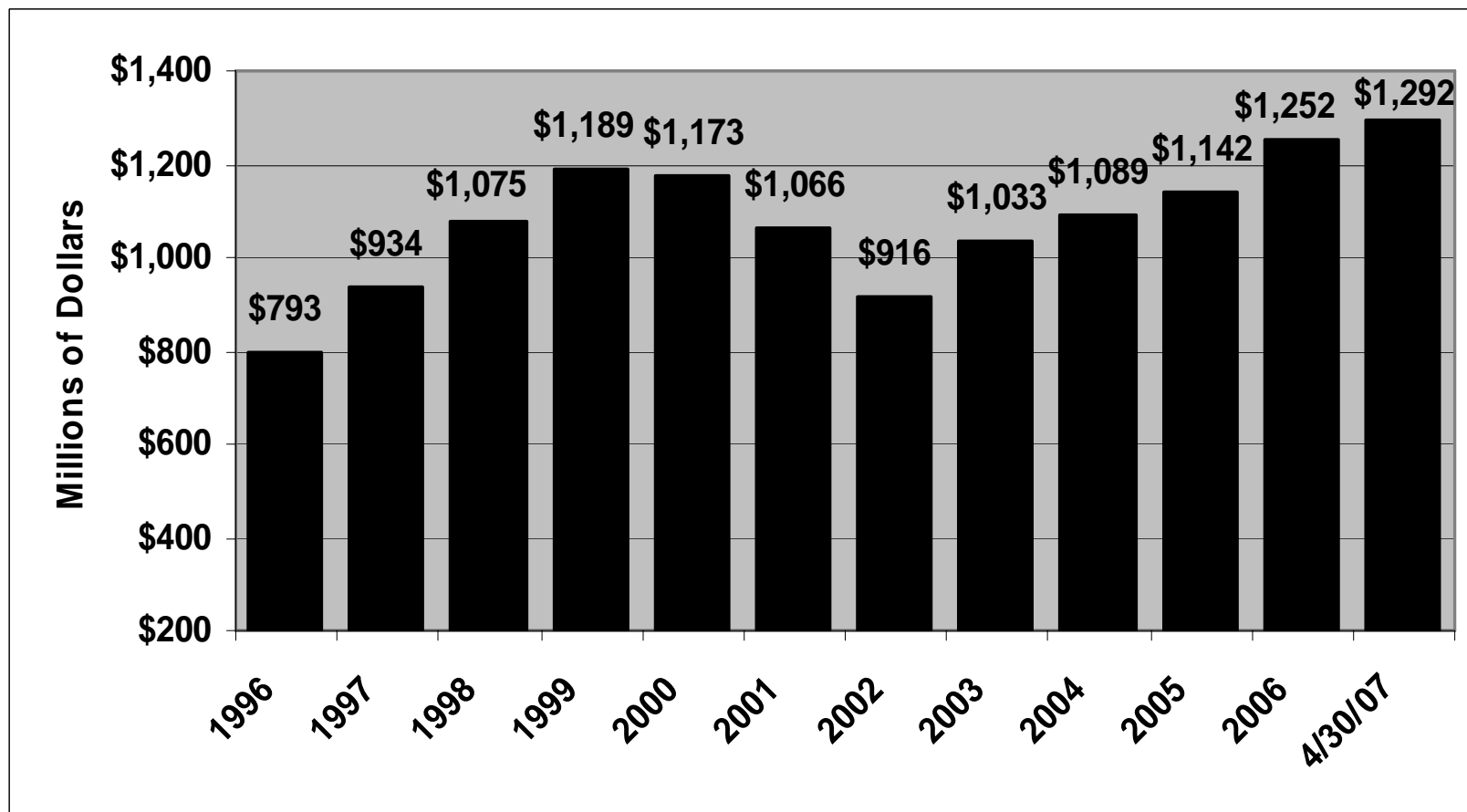
**Rate: 8.7% - Rank: 48**

Source: State Street Analytics



# Market Value

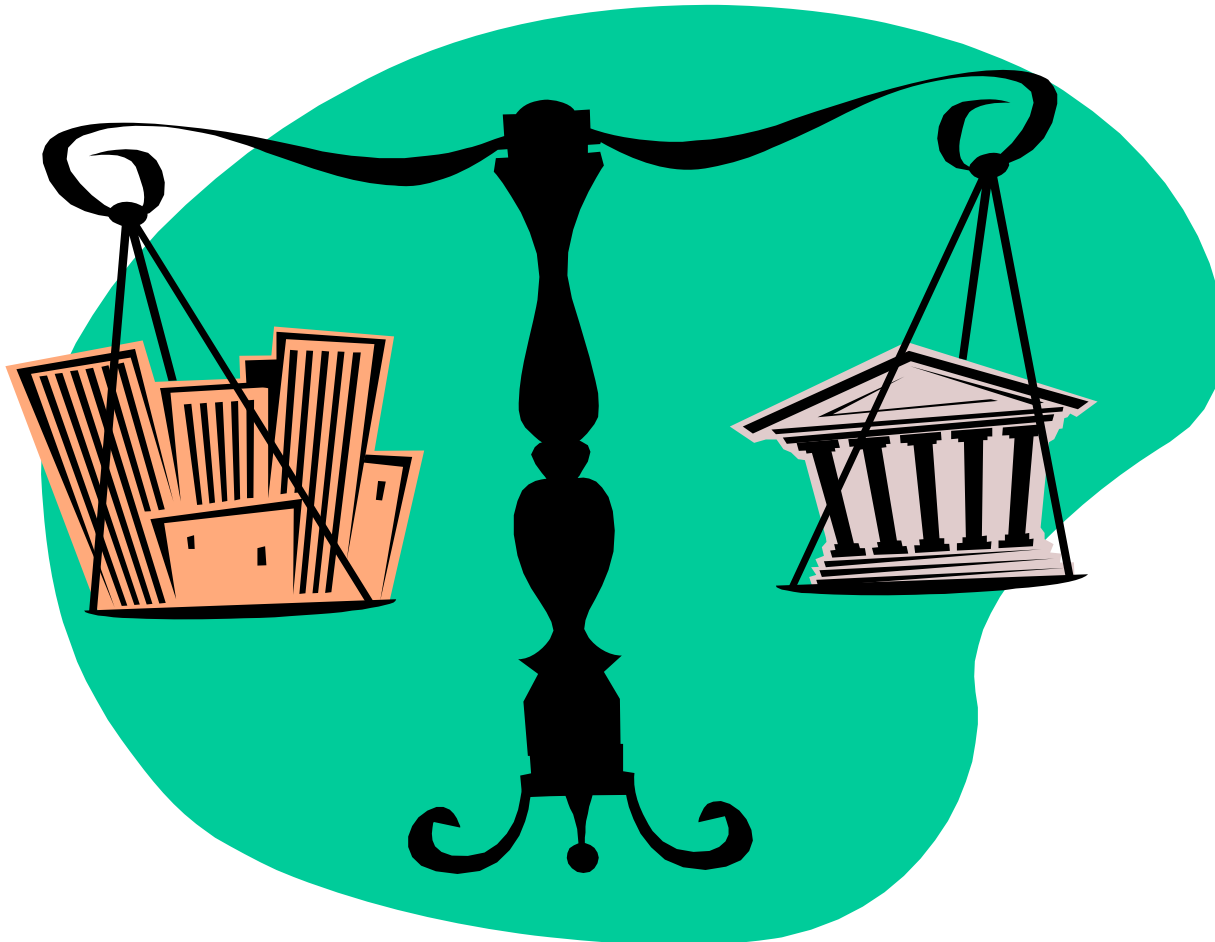
## \$1,292 Million



Years Ending December 31



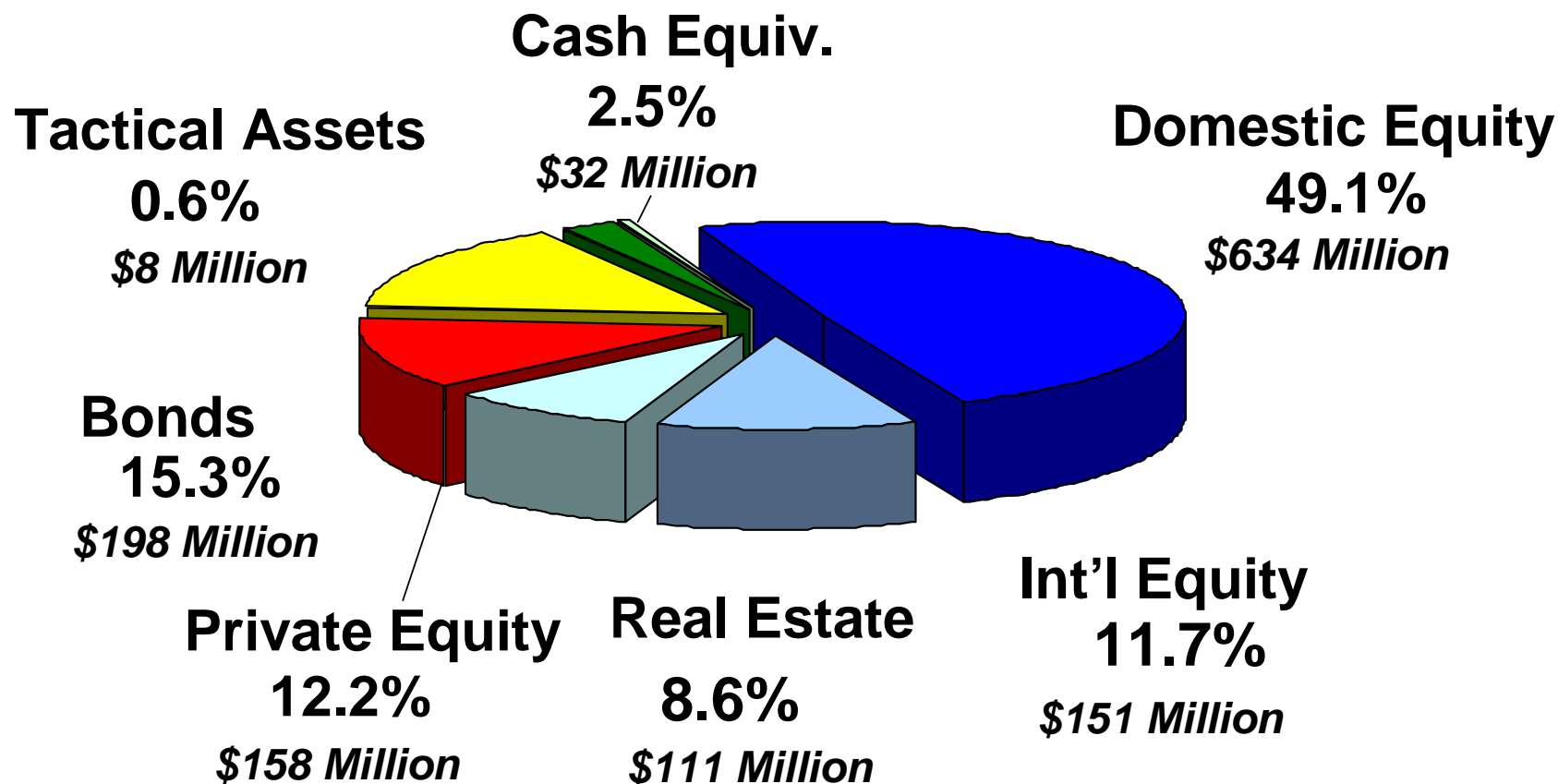
# Investment Holdings





# Asset Allocation

**\$1,292 Million**

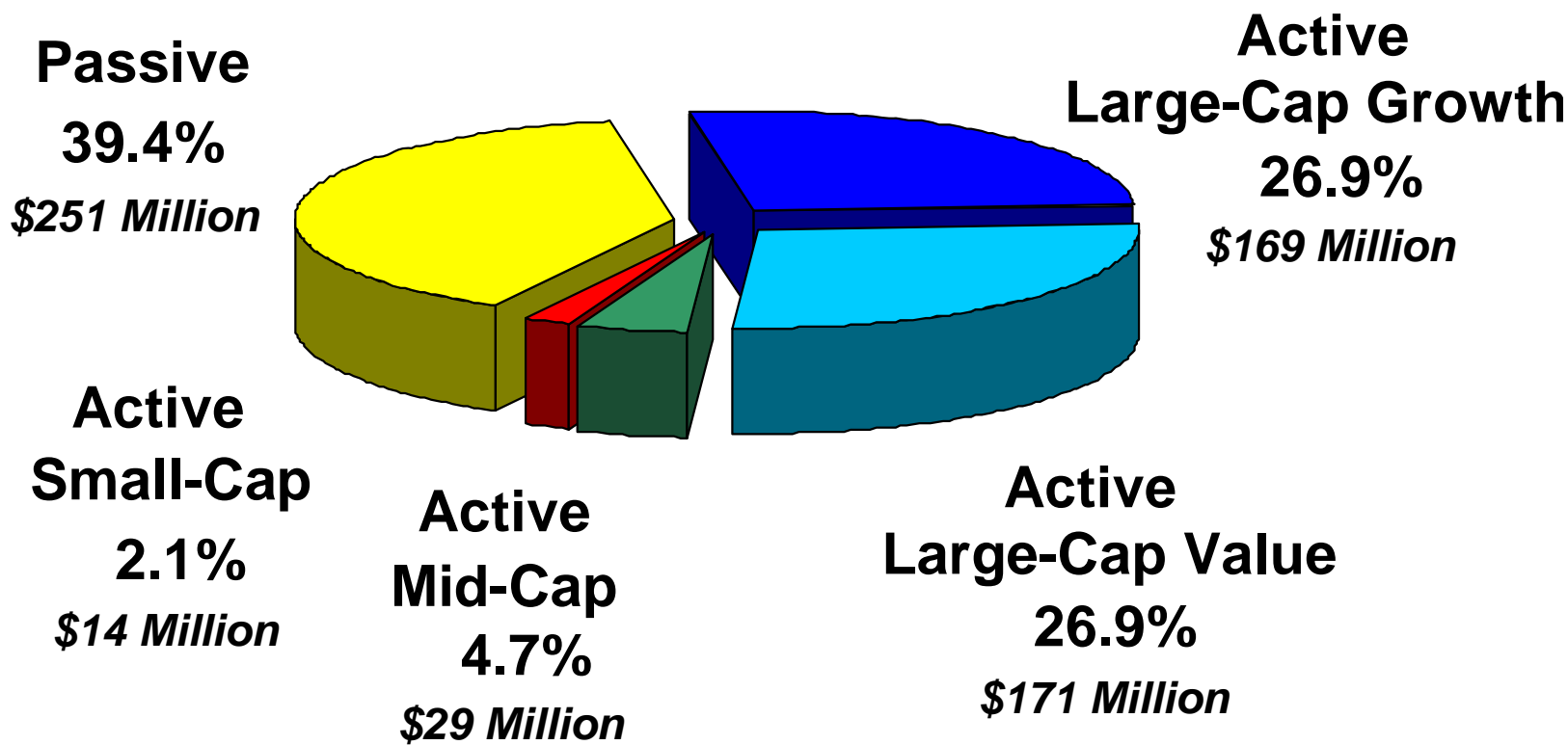


Market Value as of April 30, 2007



# Domestic Equity

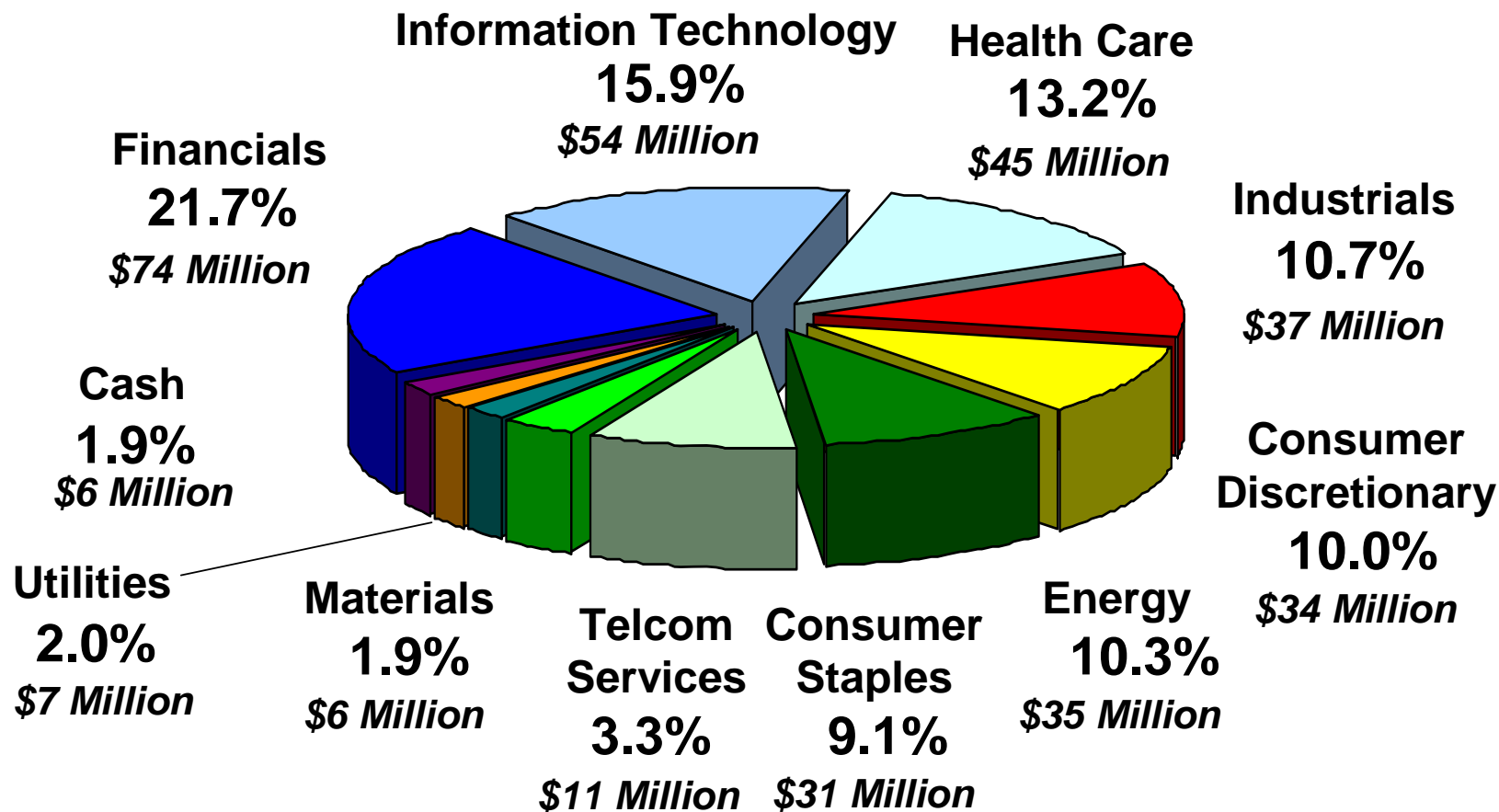
\$634 Million





# Domestic Active Equity Large-Cap Investments

**\$340 Million**

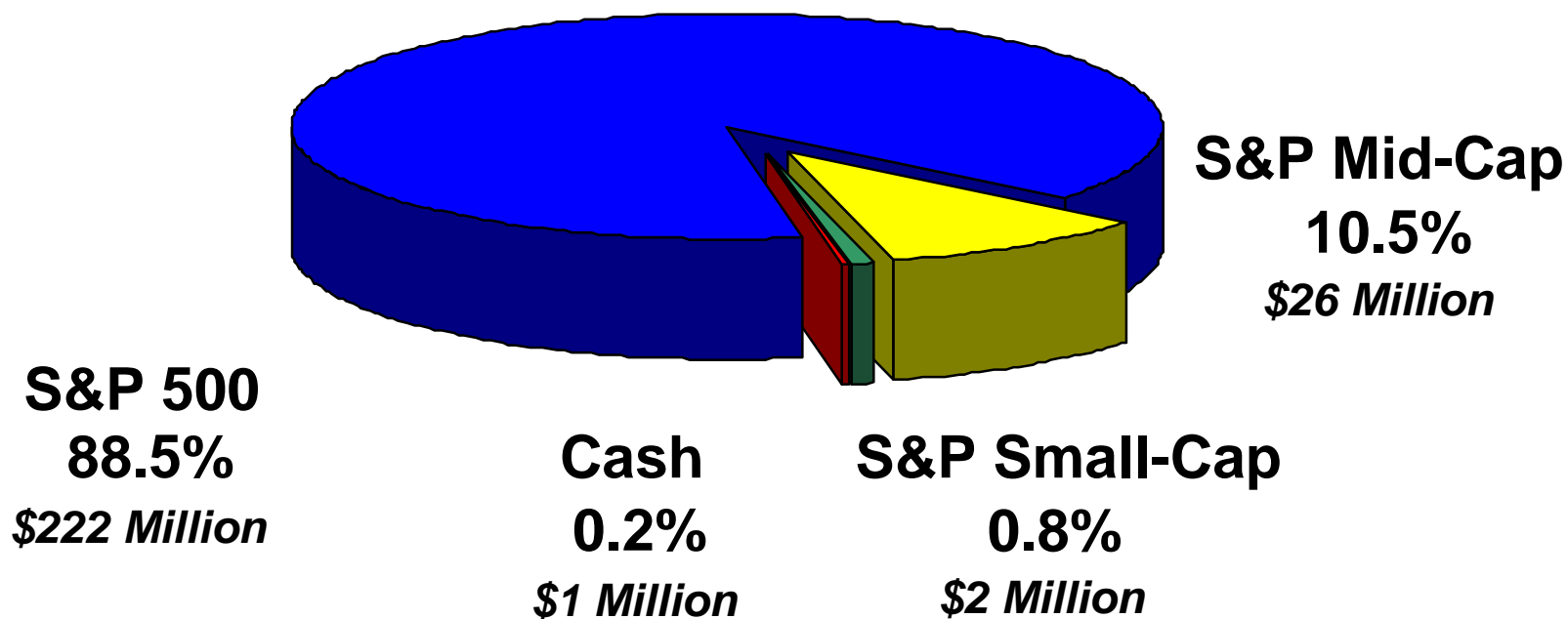


Market Value as of April 30, 2007



# Domestic Passive Equity

\$251 Million



Market Value as of April 30, 2007





# International Equity

\$151 Million

**Active Funds**

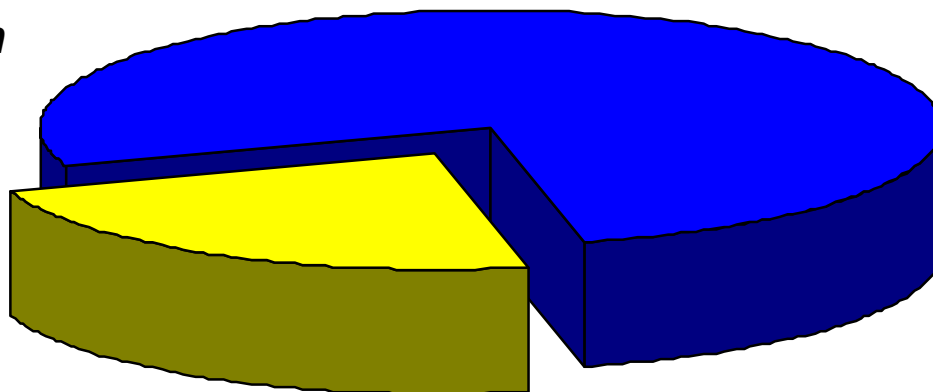
**22.8%**

***\$34 Million***

**Passive**

**77.2%**

***\$117 Million***

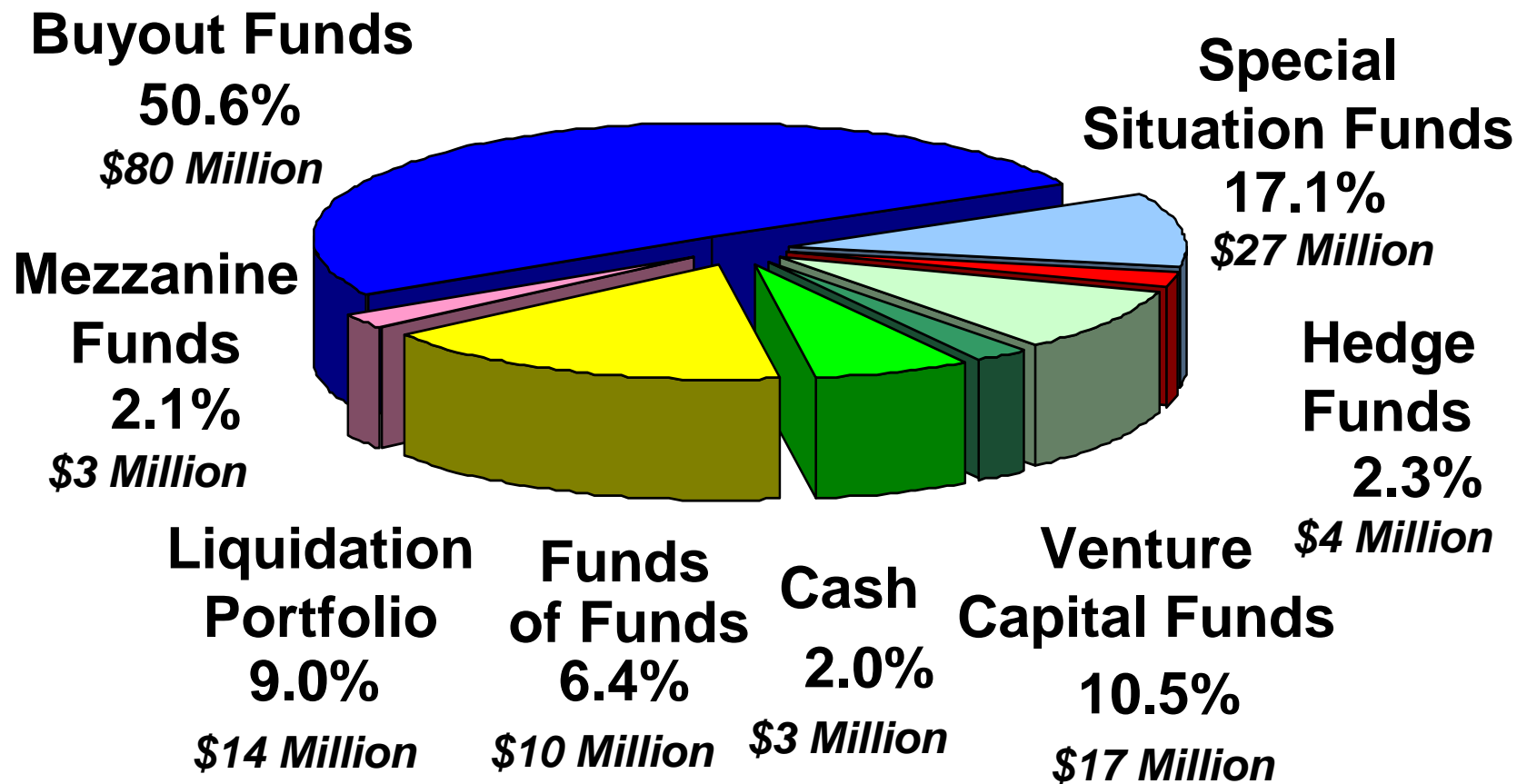


Market Value as of April 30, 2007



# Private Equity

**\$158 Million**

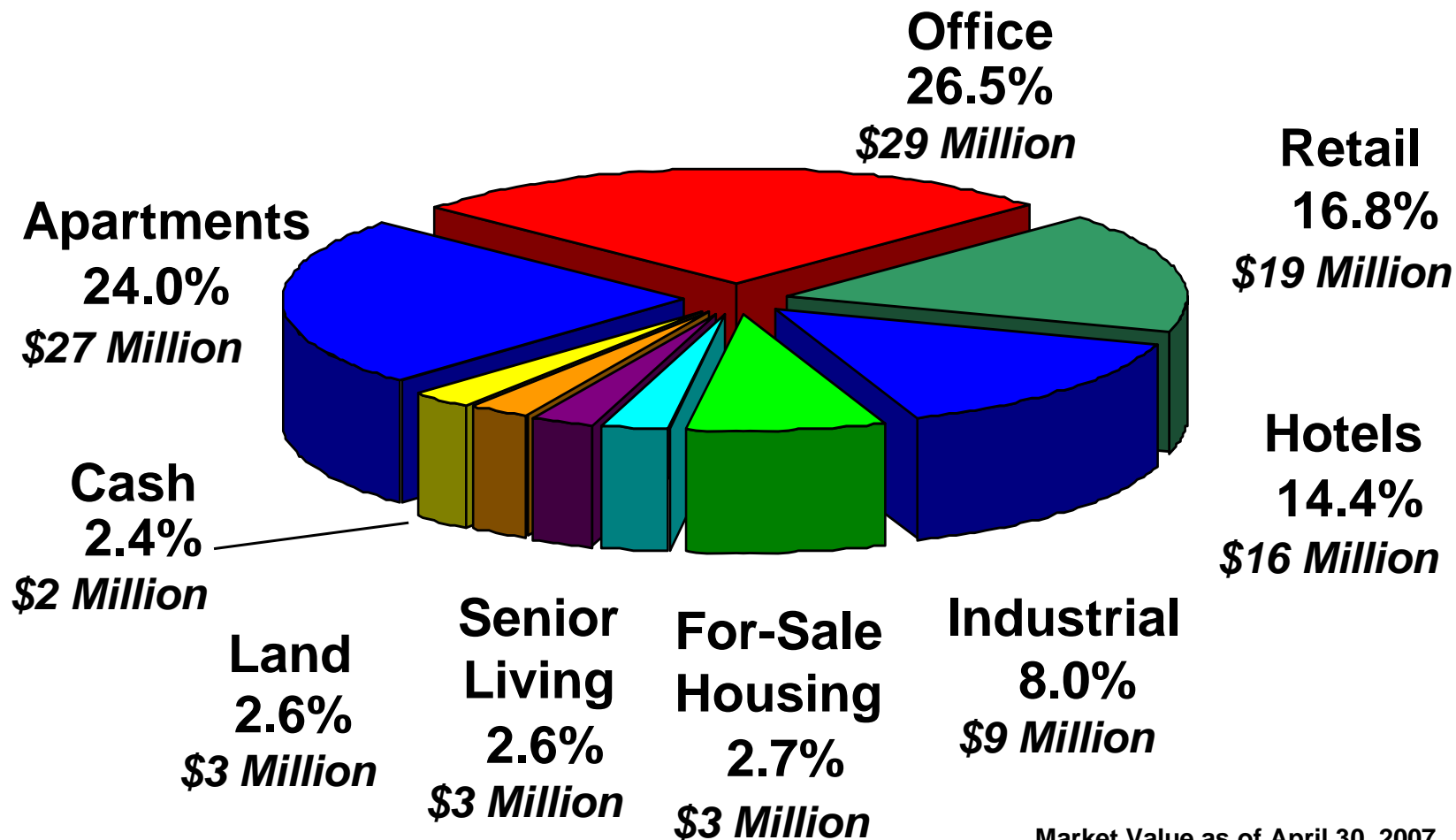


Market Value as of April 30, 2007



# Real Estate

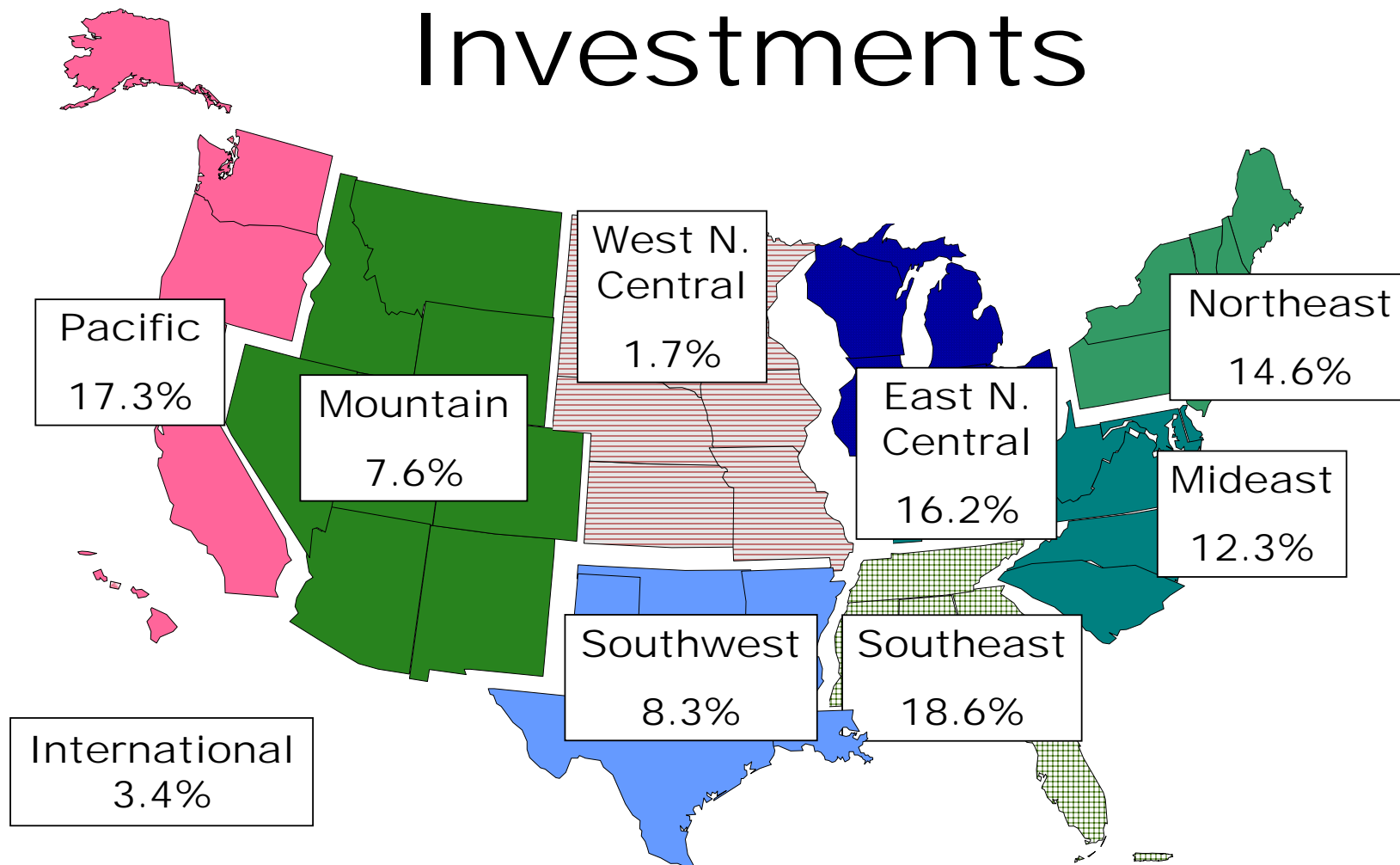
\$111 Million



Market Value as of April 30, 2007



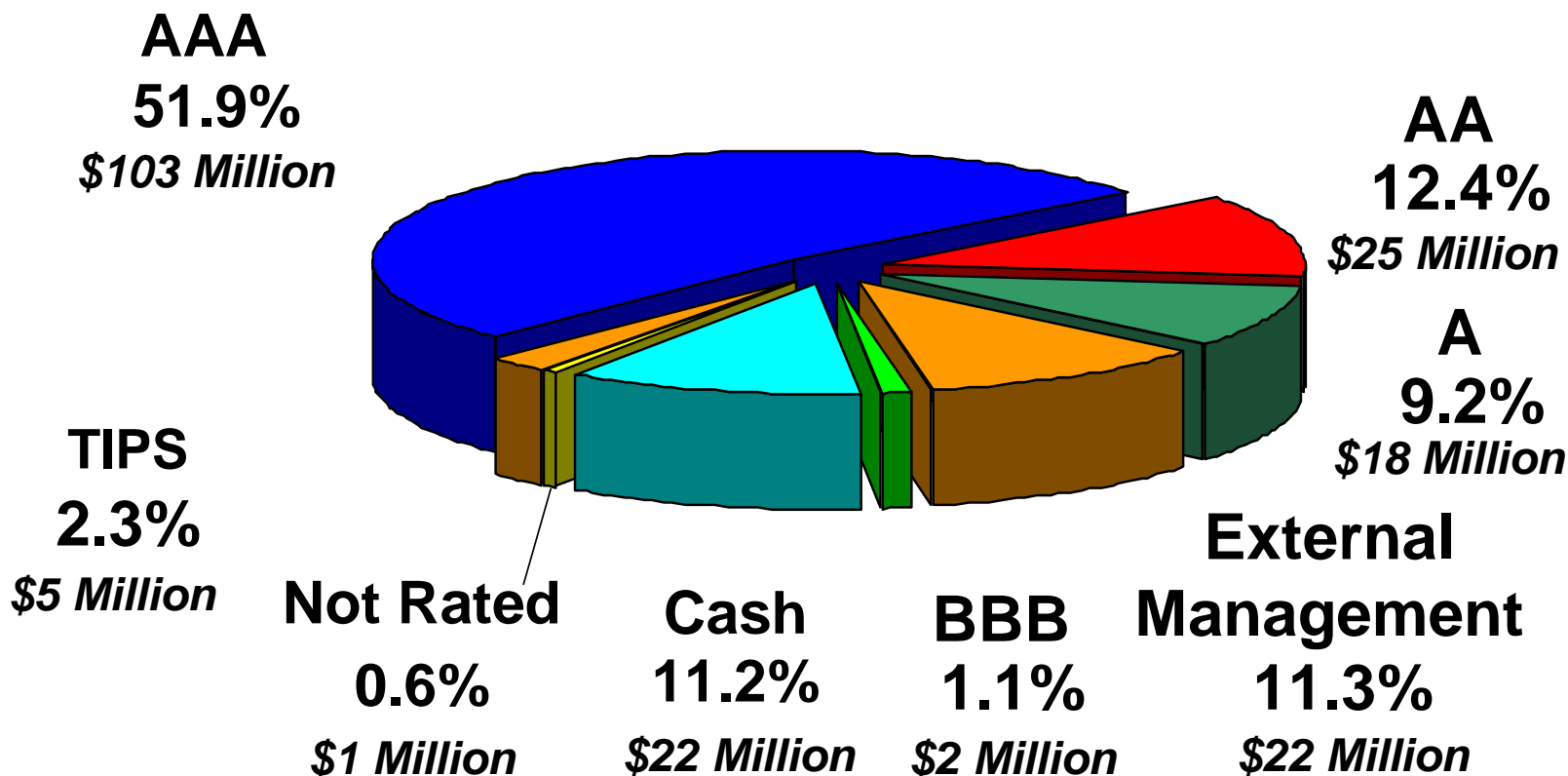
# Real Estate Investments





# Government and Corporate Bonds

**\$198 Million**



Market Value as of April 30, 2007



# Benefits of Diversification





## Annual Total Returns of Key Asset Classes 1987 - 2006

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Best	Foreign Stocks 24.64%	Small Value Stocks 29.47%	Large Growth Stocks 36.40%	U.S. Bonds 8.96%	Small Growth Stocks 51.18%	Small Value Stocks 29.15%	Foreign Stocks 32.57%	Foreign Stocks 7.78%	Large Growth Stocks 38.13%	Large Growth Stocks 23.97%	Large Growth Stocks 36.52%	Large Growth Stocks 42.16%	Small Growth Stocks 43.09%	Small Value Stocks 22.83%	Small Value Stocks 14.02%	U.S. Bonds 10.26%	Small Growth Stocks 48.54%	Small Value Stocks 22.25%	Foreign Stocks 13.54%	Foreign Stocks 26.34%	Best
	Large Growth Stocks 6.50%	Foreign Stocks 28.26%	Large Stocks 31.69%	Cash 7.81%	Small Stocks 46.05%	Small Stocks 18.42%	Small Value Stocks 23.86%	Cash 3.90%	Large Stocks 37.58%	Large Stocks 22.96%	Large Stocks 33.36%	Large Stocks 28.58%	Large Growth Stocks 28.25%	U.S. Bonds 11.63%	U.S. Bonds 8.44%	Cash 1.65%	Small Stocks 47.25%	Foreign Stocks 20.25%	Large Value Stocks 6.33%	Small Value Stocks 23.48%	
	Cash 5.47%	Small Stocks 24.89%	Large Value Stocks 26.13%	Large Growth Stocks 0.20%	Small Value Stocks 41.70%	Large Value Stocks 10.52%	Small Stocks 18.89%	Large Growth Stocks 3.14%	Large Value Stocks 36.99%	Large Value Stocks 22.00%	Small Value Stocks 31.78%	Foreign Stocks 20.00%	Foreign Stocks 26.96%	Large Value Stocks 6.08%	Cash 3.83%	Small Value Stocks -11.42%	Small Value Stocks 46.03%	Small Stocks 18.33%	Large Stocks 4.91%	Large Value Stocks 20.80%	
	Large Stocks 5.25%	Large Value Stocks 21.67%	Small Growth Stocks 20.16%	Large Stocks -3.11%	Large Growth Stocks 38.37%	Small Growth Stocks 7.77%	Large Value Stocks 18.61%	Large Stocks 1.32%	Small Growth Stocks 31.04%	Small Value Stocks 21.37%	Large Value Stocks 29.98%	Large Value Stocks 14.69%	Small Stocks 21.26%	Cash 5.89%	Small Stocks 2.49%	Foreign Stocks -15.66%	Foreign Stocks 38.59%	Large Value Stocks 15.71%	Small Value Stocks 4.71%	Small Stocks 18.37%	
	Large Value Stocks 3.68%	Small Growth Stocks 20.38%	Small Stocks 16.25%	Large Value Stocks -6.85%	Large Stocks 30.47%	Large Stocks 7.62%	Small Growth Stocks 13.37%	Large Value Stocks -0.64%	Small Stocks 28.44%	Small Stocks 16.53%	Small Stocks 22.36%	U.S. Bonds 8.70%	Large Stocks 21.04%	Small Stocks -3.02%	Small Growth Stocks -9.23%	Large Value Stocks -19.99%	Large Value Stocks 31.78%	Small Growth Stocks 14.31%	Small Stocks 4.55%	Large Stocks 15.80%	
	U.S. Bonds 2.75%	Large Stocks 16.61%	U.S. Bonds 14.53%	Small Growth Stocks -17.42%	Large Value Stocks 22.56%	U.S. Bonds 7.40%	Large Stocks 10.08%	Small Value Stocks -1.55%	Small Value Stocks 25.75%	Small Growth Stocks 11.32%	Small Growth Stocks 12.93%	Cash 4.86%	Large Value Stocks 12.72%	Large Stocks -9.11%	Large Value Stocks -11.69%	Small Stocks -20.48%	Large Stocks 28.68%	Large Stocks 10.88%	Small Growth Stocks 4.15%	Small Growth Stocks 13.35%	
	Small Value Stocks -7.12%	Large Growth Stocks 11.95%	Small Value Stocks 12.43%	Small Stocks -19.50%	U.S. Bonds 16.00%	Large Growth Stocks 5.06%	U.S. Bonds 9.75%	Small Stocks -1.81%	U.S. Bonds 18.46%	Foreign Stocks 6.05%	U.S. Bonds 9.64%	Small Growth Stocks 1.23%	Cash 4.68%	Foreign Stocks -13.96%	Large Stocks -11.87%	Large Stocks -21.26%	Large Growth Stocks 25.66%	Large Growth Stocks 6.13%	Large Growth Stocks 3.46%	Large Growth Stocks 11.01%	
	Small Stocks -8.76%	U.S. Bonds 7.89%	Foreign Stocks 10.53%	Small Value Stocks -21.77%	Foreign Stocks 12.14%	Cash 3.51%	Cash 2.90%	Small Growth Stocks -2.44%	Foreign Stocks 11.21%	Cash 5.21%	Cash 5.26%	Small Stocks -2.55%	U.S. Bonds -0.82%	Large Growth Stocks -22.08%	Large Growth Stocks -12.75%	Large Growth Stocks -22.77%	U.S. Bonds 4.10%	U.S. Bonds 4.34%	Cash 2.98%	Cash 4.75%	
Worst	Small Growth Stocks -10.48%	Cash 6.35%	Cash 8.37%	Foreign Stocks -23.45%	Cash 5.60%	Foreign Stocks -12.18%	Large Growth Stocks 1.68%	U.S. Bonds -2.92%	Cash 5.60%	U.S. Bonds 3.64%	Foreign Stocks 1.78%	Small Value Stocks -6.46%	Small Value Stocks -1.48%	Small Growth Stocks -22.43%	Foreign Stocks -21.45%	Small Growth Stocks -30.26%	Cash 1.02%	Cash 1.20%	U.S. Bonds 2.43%	U.S. Bonds 4.33%	Worst

Source: Standard & Poor's Micropal. Large Stocks are represented by the S&P 500; Large Growth Stocks are represented by S&P 500 Growth Index; Large Value Stocks are represented by the S&P 500 Value Index; Small Stocks are represented by the Russell 2000 Index; Small Growth Stocks are represented by the Russell 2000 Growth Index; Small Value Stocks are represented by the Russell 2000 Value Index; Foreign Stocks are represented by the MSCI EAFE Index; U.S. Bonds are represented by the Lehman Brothers Aggregate Bond Index; and Cash is represented by 30-day T-Bills.



# Disclaimer



**This presentation was given solely for the purpose of explaining the structure and investment process for the State of Michigan Retirement Systems. It should not be interpreted in any way as financial advice.**